



Hilltop Cloud

Time Travellers Club

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Dear Club Member,

Sometimes the lack of a colour can be quite interesting...

As we've discussed in previous letters being a scientific genius can often just be a case of noticing something that others might ignore. If you were paying attention in your high school Biology lessons you will remember the humble Peppered Moth.

This moth isn't one we need to worry about as wool lovers (most moths are harmless to your stash, if it flies towards light you definitely don't need to worry), but is the example taught to show how the mechanism of Natural Selection proposed by Darwin can cause the evolution of a species.

During the Industrial Revolution the towns and cities of the UK became highly polluted. There was no clean air legislation, and fossil fuels were powering the mills. Everything became covered in a layer of grime, including the trees.

The Peppered Moth spends its time hanging out on Birch trunks, and in its pale form has colouring to match, mostly white with some brown splotches. In an industrial environment that camouflage makes the moth stand out like a sore thumb, but there is another form of the Peppered moth. The black bodied type has no white, and is black-brown all over. Perfect camouflage for a tree covered in soot. As a result we'd expect to see more of the black kind in the cities as they're less likely to be seen by birds eaten, but less of them in the countryside as their camouflage doesn't work on clean tree trunks. The opposite is true of the pale form.

Before 1811 the dark form hadn't been observed, but by the end of the 19th century the dark form outnumbered the pale form in major cities like Manchester. The actual mechanism for the change in numbers has been the source of one of the biggest arguments in evolutionary science for a number of years. When I was a university graduate the scientist (Bernard Kettlewell), who had done the research on bird predation of the moth, was being discredited. While doing the research for this months colour I was rather pleased to discover that his elegant explanation of bird predation had been proved correct after a recent 10 year study.

Happy Spinning,

Katie